

AMENDMENTS TO THE SPECIFICATION

Please amend the heading on page 1, line 2 (numbered line 4) as follows:

~~BACKGROUND OF THE INVENTION~~

Please replace the paragraph starting on page 1, line 17 (numbered line 19) and ending on page 4, line 1 with the following:

~~However, in~~ In the case of the former cross car beam of steels or the like, it should be noted that the total weight of the cross car beam is increased disadvantageously. While, in the case of the latter cross car beam made of synthetic resin, the usage amount of synthetic resin is increased due to the provision of the thickened ribs or additional ribs, ~~causing thereby raising~~ the beam's ~~material cost in manufacturing to be raised~~ cost. Additionally, if a cross car beam is provided, on both sides thereof, with "vent" blowout ports, there arises a possibility that the cross car beam is ~~weakened in strength of beam's portions~~ weaker in the vicinity of the blowout ports.

It is generally noted that the cross car beam has its intermediate part (in the vehicle-width direction) supported by a floor panel etc. on the side of the vehicle body through the intermediary of a support stay. ~~As previously mentioned before,~~ in view of the requirements to support the instrument panel and the steering unit, it is necessary to provide a cross car beam with high rigidity. For this purpose, such a cross car beam is provided with a high rigid attachment part for fixation with a support member on the side of the vehicle body. This attachment part is formed by a high rigid material, such as steel and manganese. ~~In assembling,~~ During assembly, the attachment part of the cross car beam is fixed to an end of the support stay (as the above support member), while the other end of the support stay is fixed to a floor panel of the vehicle body. In this way, the cross car beam is carried by the vehicle body (see Japanese Patent Application Laid-open No. 2002-284018).

~~However, it~~ It should be noted, however, that a supporting structure for a cross car beam in accordance with the above prior art has various problems to be solved. First, in the case of an attachment part of steel, the weight of the cross car beam is increased. ~~Secondly,~~

Second, in the case of an attachment part of manganese, the manufacturing cost of the cross car beam is also elevated. ~~To the contrary,~~ Third, when a cross car beam and its attachment part are formed by resinous materials, there arises a possibility that the supporting rigidity of the cross car beam is lowered in comparison with that of the cross car beam made of steel, manganese or the like. ~~Additionally, in view that~~ Fourth, the cross car beam ~~has a role to carry~~ carries a steering unit etc., an air conditioning unit for feeding warm or cool wind (air) into a vehicle cabin is arranged independently of such a cross car beam (see Japanese Patent Application Laid-open No. 2001-328421).

~~Meanwhile,~~ Japanese Patent Application Laid-open No. 2002-284018 discloses a cross car beam that is equipped, on its peripheral surface, with steering support brackets for supporting a steering unit. ~~In manufacturing,~~ During assembly, after forming a main body for the cross car beam, attachment bolts for supporting the steering unit are attached to the steering support brackets of the cross car beam. Thus, the steering support brackets support the steering unit through the attachment bolts. As the steering unit is generally heavy, it is necessary for the steering support brackets to have great mechanical strength. However, as the above-mentioned steering support ~~bracket~~ brackets are thickened in view of ensuring high rigidity corresponding to the required mechanical strength, the cost of components of the cross car beam is apt to rise disadvantageously.

Additionally, it is noted that the above prior art (Japanese Patent Application Laid-open No. 2002-284018) ~~requires to fit~~ fitting the attachment bolts to the steering support brackets after providing the cross car beam with the steering support. ~~It means that~~ As a result, the manufacturing of the cross car beam of the prior art has a tendency ~~of wasting~~ to waste time and labor.

As mentioned previously, the cross car beam is arranged inside the instrument panel generally. In connection, the cross car beam is generally provided, on the assistant driver's side, with an air-bag attachment member for installation of an air-bag unit. This air-bag attachment member has to be provided with a designated strength because it may be subjected, ~~at a~~ during a vehicle collision, to a collision impact transmitted from a passenger through an air bag. ~~As previously mentioned, as mentioned before, since~~ the cross car beam is adapted to support an instrument panel and a steering unit, the cross car beam and the air-bag attachment member are formed by the use of high rigid materials, such as steels (see Japanese Patent Application Laid-open No. 10-11984), ~~which high rigid materials increase 10-119684~~. ~~However, in this case, it should be noted that~~ the total weight of the cross car beam ~~is increased~~ disadvantageously. ~~While, in~~ Moreover, in the case of forming a cross car

beam and an air-bag attachment member ~~cross by the use of synthetic resin, which is~~ lighter in weight than steel, it is necessary to thicken the cross car beam and the air-bag attachment member in view of their rigidity, thereby ~~causing~~ raising the material cost in manufacturing ~~to be raised.~~

Please amend the heading on page 4, line 2 (numbered line 3) as follows:

~~SUMMARY OF THE INVENTION~~

Please replace the paragraph on page 11, lines 19-20 (numbered lines 20-21) with the following:

Fig. 2 is a ~~respective~~ perspective view showing the mount arrangement of the cross car beam where an instrument panel of Fig. 1 is detached;

Please replace the paragraph on page 12, lines 1-2 with the following:

Fig. 8 is an enlarged perspective view of the ~~essential part~~ cross car beam of Fig. 3, showing a modification of the attachment for a holder member;

Please replace the paragraph on page 13, lines 11-22 (numbered lines 12-23) with the following:

As shown in Fig. 2, the cross car beam 12 is provided, on both right and left sides thereof, with attachment parts 13, 13 each ~~having fitting faces~~ of which has a fitting face 61 and a flange 13B (Fig. 6). The fitting faces 61 are respectively provided with bolt holes 62. A dash lower panel 14 is arranged in front of the cross car beam 12. The dash floor panel 14 is provided, on both sides thereof in a vehicle-width direction, with side panel parts 15a, 15a each ~~having attachment flanges 15~~, of which has a flange 15 folded to extend from their rear edges of the panels 15a, 15a to an out-vehicle direction. The above attachment parts 13, 13 of the cross car beam 12 are fastened to the attachment flanges 15, 15 by means of bolts 43. Additionally, the cross car beam 12 is supported, on its center side, by an upper surface 18a of a tunnel part 18 of a floor panel through a support stay 16 and a L-shaped attachment bracket 17.

Please replace the paragraph that begins on page 13, lines 28 (numbered line 29) and ends on page 14, line 17 with the following:

Fig. 3 is a perspective view of the cross car beam 12 of this embodiment. The cross car beam 12 is ~~provide~~ provided, on the driver's side, with steering support brackets (i.e. steering support parts) 20, 20 for supporting the steering unit on the outer circumferential face (rear-side) of the beam 12. As previously ~~mentioned above~~, the cross car beam 12 is provided, on the front side, with the attachment bracket 21 for fixing the cross car beam 12 to the dash lower panel 14. Each of the steering support brackets 20, 20 has a tap-end stud bolt 49 formed to project downwardly by insert molding. On the other hand, the cross car beam 12 is ~~provide~~ provided, on its rear face on the driver's side, with an air-bag casing 22. On both right and left ends of the cross car beam 12, cylindrical vent "blowout" ports 23, 24 are formed on the upper surface of the beam 12. The cross car beam 12 has a rib 25 formed in the vicinity of the beam's center in the vehicle-width direction and also on the driver's side, for connection with the support stay 16. In the lower portion of the rib 25, an attachment part 26 is provided for its attachment with the support ~~stay 26~~ stay 16. Further bolt holes 27 are

formed in the attachment part 26, for engagement with the support stay 16. In assembly, the upper end of the support stay 16 is fastened to the bolt ~~holes 17~~ holes 27 by means of bolts.

Please replace the paragraphs starting on page 14, line 20 and ending on page 15, line 30 with the following:

The cross car beam 12 includes a first cylindrical body 28, which made of resin and which is molded first. A previously, a lid member 29, which is also made of resin and resin, is molded outside one end of the body 28 on the assistant driver's side by enveloped ~~casting~~ and a casting. A second cylindrical body 30, which is also made of resin and resin, is molded outside ~~one end~~ another end of the body 28 on the driver's side by enveloped casting.

The cylindrical body 28 has an upper halved member 31 ~~having~~ that has a substantial U-shaped section and a lower halved member 32 ~~having~~ that has a substantial U-shaped section throughout. The halved members 31, 32 have their longitudinal ends closed by vertical walls 31a, 32a, respectively. The upper halved member 31 is provided, on both sides in the longitudinal direction, with openings 44, 24 corresponding to the vent "blowout" ports 23, 24. The openings 44, 24 are surrounded by upwardly projecting flanges 44a, 24a ~~projecting upwardly~~. The lower halved member 32 is provided, at its intermediate part in the vehicle-width direction, with a lower opening 71, which is connected to a not-shown HVAC (Heating, Ventilating and Air-Conditioning) system. The opening 71 is surrounded by a flange 72 ~~extending~~ that extends downwardly. On the rear surface of the lower halved member 32, the above-mentioned air-bag casing 22 is formed in one body with the member 32, in the form of a bottomed box. On the bottom of the casing 22, an opening ~~22b~~ is 22a is formed to accommodate a not-shown disk-shaped inflator for air-bag.

On the other hand, the cylindrical body 30 is provided, inside in the vehicle-width direction, with an opened end around which the rib 25 is formed over the whole circumference so as to project radially outward of the cross car beam 12. On the underside of the rib 25, the attachment part 26 is formed so as to project downwardly. In assembling, the support stay 16 is fastened to the attachment part 26 of the rib 25. The second cylindrical body 30 is provided, at its outer end in the vehicle-width direction, with the attachment part 13 extending vertically. Near the attachment part 13 and on the top of the second cylindrical body 30, a blowout opening 45 is provided with an upwardly projecting flange ~~projecting~~

~~upwardly~~. On the rear surface of the ~~second cylindrical body's part (30)~~ body 30, in the vicinity of the opening 45, the above steering support brackets 20, 20 in pairs are arranged in the form of bottomed boxes ~~opening that open~~ upwardly. ~~While, the~~ The attachment bracket 21 is formed on the front surface of the ~~second cylindrical body's part (30)~~ body 30 in the vicinity of the opening 45. These brackets 20, 20 and 21 are ~~respectively formed~~ integrally formed with the second cylindrical body 30. It is noted that the vent "blowout" port 23 of Fig. 3 has the blowout opening 44 of the first cylindrical body 28 and the blowout opening 45 of the second cylindrical body 30, thereby providing a tight double-pipe structure in a tight manner.

Please replace the paragraphs starting on page 16, line 6 and ending on page 17, line 10 with the following:

As shown in these figures, the attachment part 13 is in the form of a honeycomb structure. That is, the attachment part 13 includes a plurality of ~~later mentioned ribs (61, 62, 63, 64, 65, 66, 67)~~ later-discussed ribs 63-67, which are formed in a recess opening outward in the vehicle-width direction. This recess is defined by a substantially-octagonal outer circumferential wall (surface) 68. Owing to the provision of the ribs ~~61 to 63-67~~, the interior of the recess is divided into a plurality of small spaces. In detail, at the center of the attachment part 13 in the fore-and-aft direction of the vehicle, the fitting face 61 (also called an attachment wall (surface) 61 or surface) is formed so as to extend in the axial direction of the cross car beam 12 and also vertically. Further, the attachment wall 61 is also formed so as to project from the recess outwardly in the vehicle-width direction. Reinforcing ribs 63, 64 are formed to extend from upper and lower parts of the attachment wall 61 rearward of the vehicle, respectively. The reinforcing ribs 63, 64 are also formed so as to project from the recess. The outer edges of the ribs 63, 64 ~~projecting that project~~ from the recess are removed off obliquely, so that the resulting rear ends of the outer edges terminate at the outer circumferential wall 68. In the recess part preceding the attachment wall 61, support ribs 65, 66 are formed so as to extend from the wall 61 forwardly in level with the reinforcing ribs 63, 64, respectively. In the attachment wall (part) 61 projecting from the recess outward in the vehicle-width direction, an area having no rib is defined on the front side of the wall 61 to allow it to overlap with the attachment flange 15 (Fig 2). In the attachment wall 61, its parts

that are equipped with the bolt holes 62 are large in thickness, while the intermediate part between the reinforcing ribs 63, 64 is small in thickness.

In the above recess, as shown in Fig. 6, a plurality of fixing ribs 67 are formed so as to extend from a radial center (axis) 61a of the attachment wall 61 in the radial direction. Extending in the radial direction of the attachment part 13, these fixing ribs 67 are fixed to the inner face of the outer circumferential wall 68. ~~Noted-Note~~ that respective leading ends of the attachment part 61 and the ribs 63-67 ~~ribs 61, 62, 63, 64, 65, 66 and 67~~ terminate at flat portions of the octagonal-shaped circumferential wall 68 ~~respectively~~. Additionally, the attachment part 13 is joined, on its center side in the vehicle-width direction, to the blowout opening 45 outside the vent "blowout" port ~~23 thereby~~ 23, thereby reinforcing it.

Please replace the paragraph on page 18, lines 16-30 with the following:

Upon positioning the previously-formed first cylindrical body 28 in the molding die 38, when moving the top die 35, the bottom die 36 and the side die 37 to complete the molding die 38, ~~a cavity 80~~ a cavity 40 is defined between the first cylindrical body 28 and the inner surface of the molding die 38. Then, molten resin 41 is poured into the cavity 40 through a gate 39 that is formed in the top die 35. Subsequently, the cavity 40 is ~~filled up~~ filled with the molten resin 41. From this state, as the molten resin 41 hardens in the cavity 40, the second cylindrical body 30 is formed on the circumference of the first cylindrical body 28 by enveloped casting. Thereafter, when the top die 35, the bottom die 36 and the side die 37 are moved to open the molding die 38, the cross car beam 12 of this embodiment is finished. Here, it is desirable that the above molten resin 41 (in solid state) is stronger than ~~has strength (in solid state) larger than that of~~ the resin that forms ~~forming~~ the first cylindrical body 28. For example, a molten resin that is mixed with fibers is preferable for the second cylindrical body 30.

Please replace the paragraphs starting on page 19, line 22 and ending on page 20, line 15 with the following:

~~Noted~~ Note that ~~since~~ as the vent “blowout” port 23 is formed by the inner and outer openings 44, 45 in one body, the strength of the opening 23 is further improved.

~~Since~~ As the first cylindrical body 28 is partially surrounded by the second cylindrical body 30 and is made from the molten resin 41 of high rigidity, it is possible to provide the cross car beam 12 with high rigidity. Therefore, even if the cross car beam 12 is provided, on its lower surface at the center side in the vehicle-width direction, with the opening 71 for connection with the previously-mentioned HVAC system, it is possible to maintain the strength of the cross car beam 12 as a whole.

According to the support structure of the cross car beam of the aforementioned first embodiment, the car beam part on the driver’s side, which ~~that~~ requires high rigidity in view of supporting the steering unit etc., is tightly formed ~~is formed~~ by a double-pipe structure of the first cylindrical body 28 and the second cylindrical body 30 ~~in a tight manner~~. Additionally, the opening end of the second cylindrical body 30 outside the double-pipe structure is reinforced by ~~the ribs~~ the rib 25 effectively. That is, owing to the provision of ~~the ribs~~ the rib 25, it is possible to increase the ~~coefficient of cross-section~~ strength of the second cylindrical body 30 at the opening end.

As shown in Fig. 9, ~~since~~ as the side die 37 is provided with no draft angle, at its part ~~corresponding~~ that corresponds to the attachment part 26 of the rib 25, ~~with no draft angle~~, the opening end of the second cylindrical body 30 ~~becomes parallel with~~ is parallel to a side surface 37a of the side die 37. Consequently, the fastening strength of the attachment part 26 with the support stay 16 can be improved.